

CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

- 1 1. (Currently amended) A method for simulating film grain, comprising the steps of:
 - 2 receiving an encoded image (14);
 - 3 receiving film grain characterization information (25) indicative of grain in a film on which
 - 4 the encoded image was originally recorded prior to encoding,
 - 5 decoding at least the encoded image; and
 - 6 simulating a pattern of film grain (29) in accordance with the received film grain
 - 7 characterization information; and,
 - 8 ~~blending the simulated film grain pattern (29) with the decoded image (16).~~
- 1 2. (Original). The method according to claim 1 further comprising the steps of:
 - 2 receiving the encoded image (14) in an ITU-T H.264 video coding format; and
 - 3 receiving the film grain characterization information (25) as a Supplemental Enhancement
 - 4 Information (SEI) Message.
- 1 3. (Original) The method according to claim 1 wherein the step of receiving the film grain
2 characterization information includes the step of receiving an identifier of which type of film stock
3 was originally used to record the encoded image.
- 1 4. (Original) The method according to claim 1 wherein the step of receiving the film grain
2 characterization information (25) includes the step of receiving an identifier of a model that best
3 approximates the film grain in the film stock originally used to record the encoded image.
- 1 5. (Original) The method according to claim 1 wherein the step of receiving the film grain
2 characterization information (25) includes the step of receiving information indicative of film grain
3 size, intensity, spatial correlation, and color correlation.

1 6. (Original) The method according to claim 1 further including the step of separately
2 simulating the pattern of film grain for separate groups of frames in the encoded video.

1 7. (Currently amended) A method for simulating film grain, comprising the steps of:
2 encoding an image (12) originally recorded on film;
3 identifying the film grain present in the input image prior to encoding; and
4 establishing film grain characterization information (25) for the film in accordance with the
5 identified film grain in the image using a predefined modeling process so that upon decoding the
6 encoding image, a pattern of film grain can be simulated in accordance with the film grain
7 characterization information and blended with the decoded image.

1 8. (Original) The method according to claim 7 further comprising the steps of:
2 encoding the image (12) in an ITU-T H.264 video coding format; and
3 formatting the film grain characterization information (25) as a Supplemental Enhancement
4 Information (SEI) Message.

1 9. (Original) The method according to claim 7 wherein the step of establishing the film
2 grain characterization information (25) includes the step of identifying which type of film
3 stock originally recorded the encoded image.

1 10. (Original) The method according to claim 7 wherein the step of establishing the film
2 grain characterization information (25) includes the step of identifying a model that best provides an
3 indication of film grain in the film originally recorded the image.

1 11. (Original) The method according to claim 10 wherein step of identifying the model
2 includes choosing among a best model among a plurality of film grain models.

1 12. (Original) The method according to claim 7 wherein the step of establishing the film
2 grain characterization information (25) includes the step of establishing film grain size, intensity,
3 spatial correlation, and color correlation.

1 13. (Original) The method according to claim 7 further including the step of removing film
2 grain from the image prior to encoding.

1 14. (Original) Apparatus for simulating film grain in an image, comprising of:
2 a decoder (15, 28) for receiving an encoded image (12) and for receiving film grain
3 characterization information indicative (25) of grain in a film on which the encoded image was
4 originally recorded and for decoding the image; and
5 a film grain restoration processor (30) for simulating a pattern of film grain in accordance
6 with the received film grain parameter information; and for blending the simulated film grain pattern
7 to the decoded image.

1 15. (Original) The apparatus according to claim 14 wherein the decoder receives the film
2 grain characterization information (25) as parallel information to the encoded image.

1 16. (Original) The apparatus according to claim 14 wherein the decoder receives the
2 encoded image (12) in an ITU-T H.264 video coding format; and wherein the decoder receives the
3 film grain characterization (25) information as a Supplemental Enhancement Information (SEI)
4 Message.

1 17. (Original) The apparatus according to claim 14 wherein the film grain characterization
2 information (25) includes an identifier of which type of film stock originally recorded the encoded
3 image to provide an indication of film grain.

1 18. (Original) The apparatus according to claim 14 wherein the film grain characterization
2 information (25) includes an identifier of a model that best provides an indication of film grain in the
3 film originally recorded the encoded image to provide an indication of film grain.

1 19. (Original) The apparatus according to claim 18 wherein the model identifier identifies
2 the best model among a plurality of film grain models.

1 20. (Original) The apparatus according to claim 14 wherein the film grain
2 characterization information (25) includes information indicative of film grain size, intensity,
3 spatial correlation, and color correlation.

1 21. (Original) The apparatus according to claim 14 wherein the film grain restoration
2 process separately simulates the pattern of film grain for separate groups of frames in the encoded
3 video

1 21 (New) The method according to claim 1 further comprising the step of blending the
2 simulated film grain pattern (29) with the decoded image (16).